

U.S. Patent Application Serial No. 09/916,314
Amendment filed November 16, 2005
Reply to OA dated August 25, 2005

REMARKS

Prior to this amendment, claims 2, 7-8, 11 and 13-20 were pending in this application, with claims 13-19 withdrawn from consideration. The present amendment amends claim 11 and adds new claim 21. Upon entry of this amendment, claims 2, 7-8, 11 and 13-21 will be pending, with claims 13-19 withdrawn from consideration.

The amendment to claim 11, and the recitation of new claim 21, are supported by the description on page 28, line 16, to page 29, line 22, in the specification of the present application.

No new matter has been introduced by this Amendment. Reconsideration of the rejections and objections is respectfully requested.

Claim 11 is objected to because of informalities. (Office action paragraph no. 5)

The objection is overcome by the amendment to claim 11.

As suggested by the Examiner, the word "from" has been inserted between "different" and "each other". Claim 11 has also been further amended for clarity and grammatical correctness, such that this portion of the claim is amended: "in which a the conjugate ~~length~~ lengths of polymer ~~is~~ are different from each other ..."

Claim 11 is rejected under 35 U.S.C. §102(b) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Wilderman et al. (EP 745658 A1). (Office Action paragraph no. 8)

The rejection of claim 11 over Wilderman is respectfully traversed.

The Examiner cites the reference in claim 16, on page 16, as disclosing a device comprising a film of copolymer on a solid support, and two electrodes. The Examiner cites the abstract for disclosing "light-emitting copolymers comprising interruption units and varying conjugation lengths that influence the wavelength of light emitted from the polymer". The Examiner considers these copolymers to meet the limitation of claim 11 regarding "a conjugation length of polymer is different [from] each other so that these areas have two different luminous colors or more".

However, Applicant argues that Wilderman does **not** disclose an organic EL layer having **areas in which the conjugate lengths of the polymers are different from each other**, such that the **areas have two different luminous colors** or more, as required by claim 11.

Applicant notes that in the present specification, achieving this limitation involves preparing areas that differ in the polymer present. The invention of claim 11 may be understood with regard to the Third Embodiment, starting on page 27, line 23, of the present specification, as shown in Figs. 5A to 5D. Specifically, each of anodes 32 in Fig. 5A represents a "lower electrode". As seen in Fig. 5B, anode 32 has different areas, which are either red-color pixels (33R) or green-color pixels (33G). An ArF laser beam is irradiated onto specific areas (page 28, lines 21-25) to create the green-color pixels, and then the blue-color pixels shown in Fig. 5C.

Although Wilderman discusses copolymers having different colors, the reference does not disclose a device having different copolymers (for different colors) in different areas on one electrode.

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Moreover, in Wilderman, the different copolymers must be synthesized separately, and there is no disclosure in Wilderman about how to make a device as in claim 11. Applicant submits that Wilderman's disclosure does not enable a device such as that of claim 11.

Applicant therefore submits that claim 11 is not anticipated by, nor obvious over, Wilderman.

Claim 11 is rejected under 35 U.S.C. §102(e) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Chao et al. (US 6,037,190). (Office Action paragraph no. 9)

The rejection is overcome by the amendment to claim 11.

The Examiner cites Chao in the abstract and in column 3, line 61, to column 4, line 2. Specifically, the Examiner refers to Chao's disclosure that: "By irradiating predetermined portions of the blue-light emitting layer with certain light sources, pixels that emit different light colors are formed on the irradiated portions of the blue-light emitting layer."

Claim 11 has been amended to add as the last clause: "wherein a material of said organic EL layer is the polymer whose conjugate length is shortened by light irradiation to change the luminous color". For example, the polymer that is not subjected to the light irradiation emits red-color light (this is recited as a limitation in new claim 21). When the polymer is subjected to the light irradiation, the conjugate length of the polymer is shortened so that the organic EL layer emits green-color light (i.e., the emission wavelength of the organic EL layer is shortened). When the polymer is further subjected to the light irradiation, the conjugate length of the polymer is further

shortened so that the organic EL layer emits blue-color light (i.e., the emission wavelength of the organic EL layer is further shortened).

On the other hand, Chao et al. discloses that the material of the blue-light emitting layer is a compound whose conjugation-coupling structures are generated by the light irradiation to narrow the energy gap (column 3, lines 61-62), such as the di-2,6-azide anthracene and lactam anthracene trimer (see FIGs. 10 and 11).

Chao et al. also discloses that the blue-light emitting layer emits green-color light when the compound is subjected to the light irradiation and that the blue-light emitting layer emits red-color light when the compound is further subjected to the light irradiation. That is, Chao et al. discloses that the emission wavelength of the blue-light emitting layer is **lengthened** by the light irradiation, in contrast with amended claim 11, where the “conjugate length is **shortened** by the light irradiation ...”

That is, Chao et al. does not disclose or suggest that the material of the organic EL layer is a polymer whose the conjugate length is shortened by the light irradiation. Applicant further notes that, in claim 11, since the polymer whose the conjugate length is shortened by the light irradiation is used as the material of the organic EL layer, the multi-color emission organic EL display device can be easily manufactured. There is no suggestion for this in Chao et al.

Applicant therefore submits that claim 11, as amended, is not anticipated by, and is not obvious over, Chao et al.

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In view of the aforementioned amendments and accompanying remarks, the claims, as amended, are in condition for allowance, which action, at an early date, is requested.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicant's undersigned agent at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, the Applicant respectfully petitions for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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